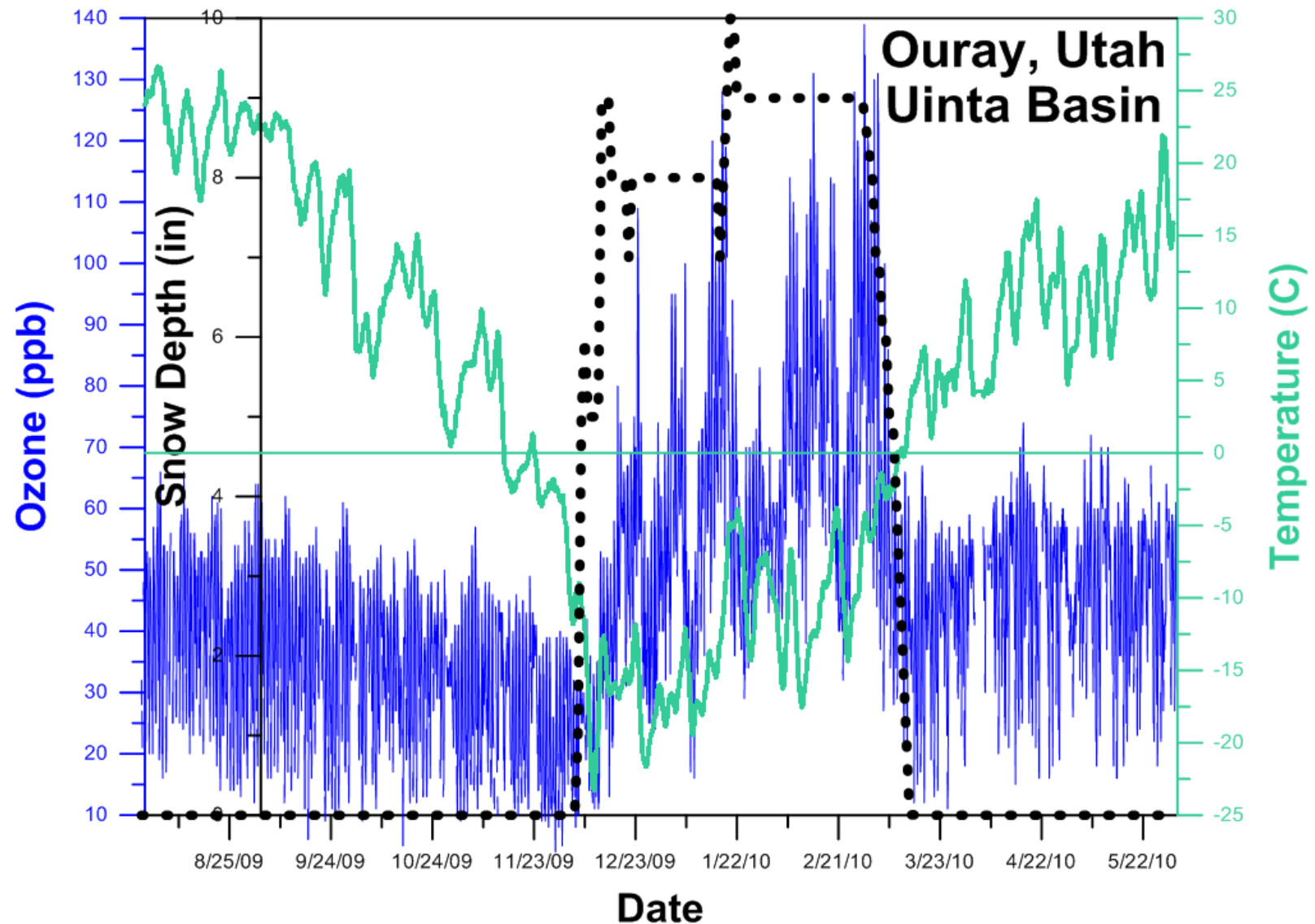




## Uintah Basin Winter Ozone

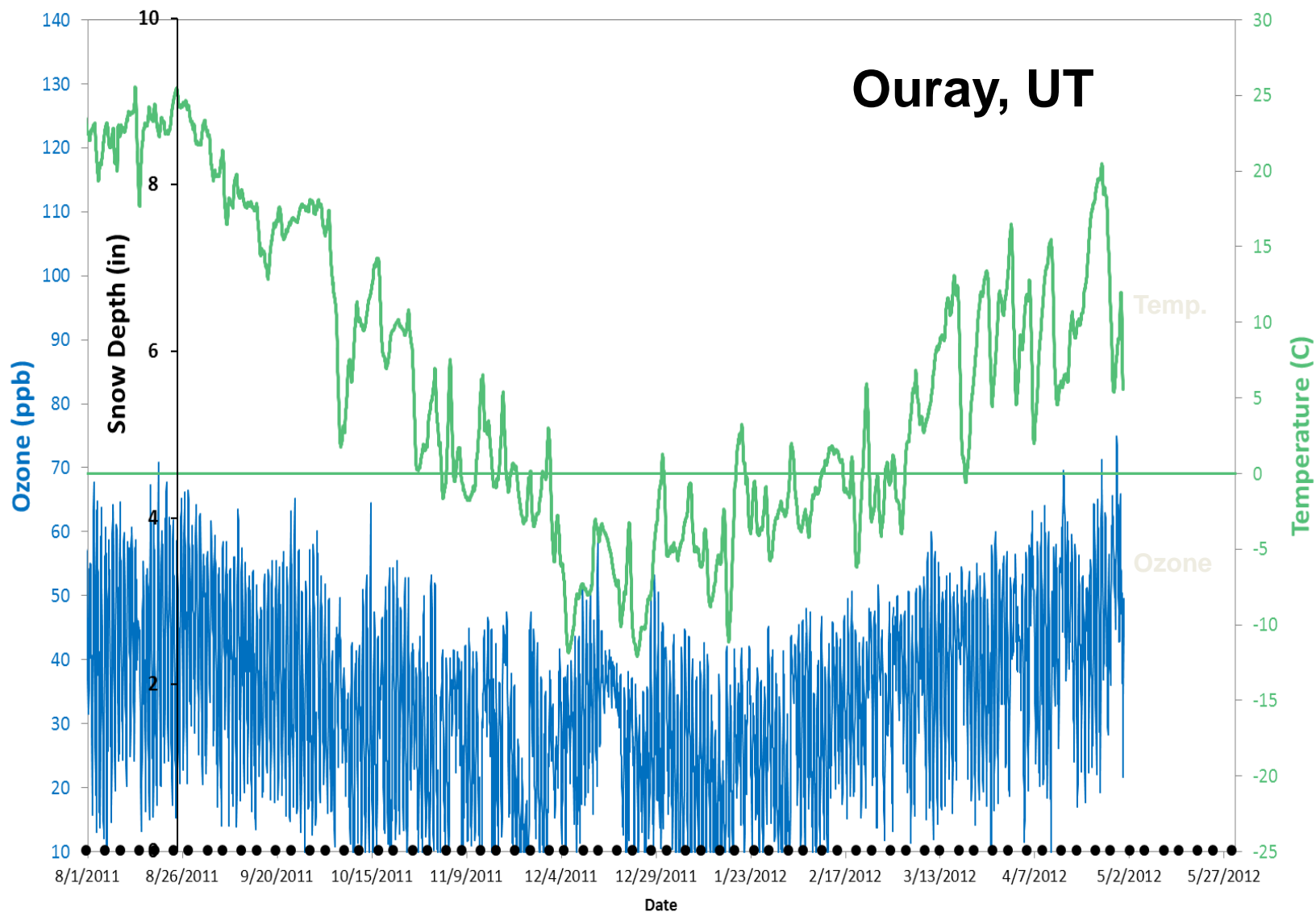
- Monitoring in the Basin since 2009
- High ozone during winter – unique
- Episodic – with specific weather conditions
- High year-to-year variability
- Currently designated “unclassifiable”
- Special winter ozone studies – past 3 winters
- Apply findings to mitigation – Ozone Advance

# Ozone, Temperature and Snow Depth 2010/2011

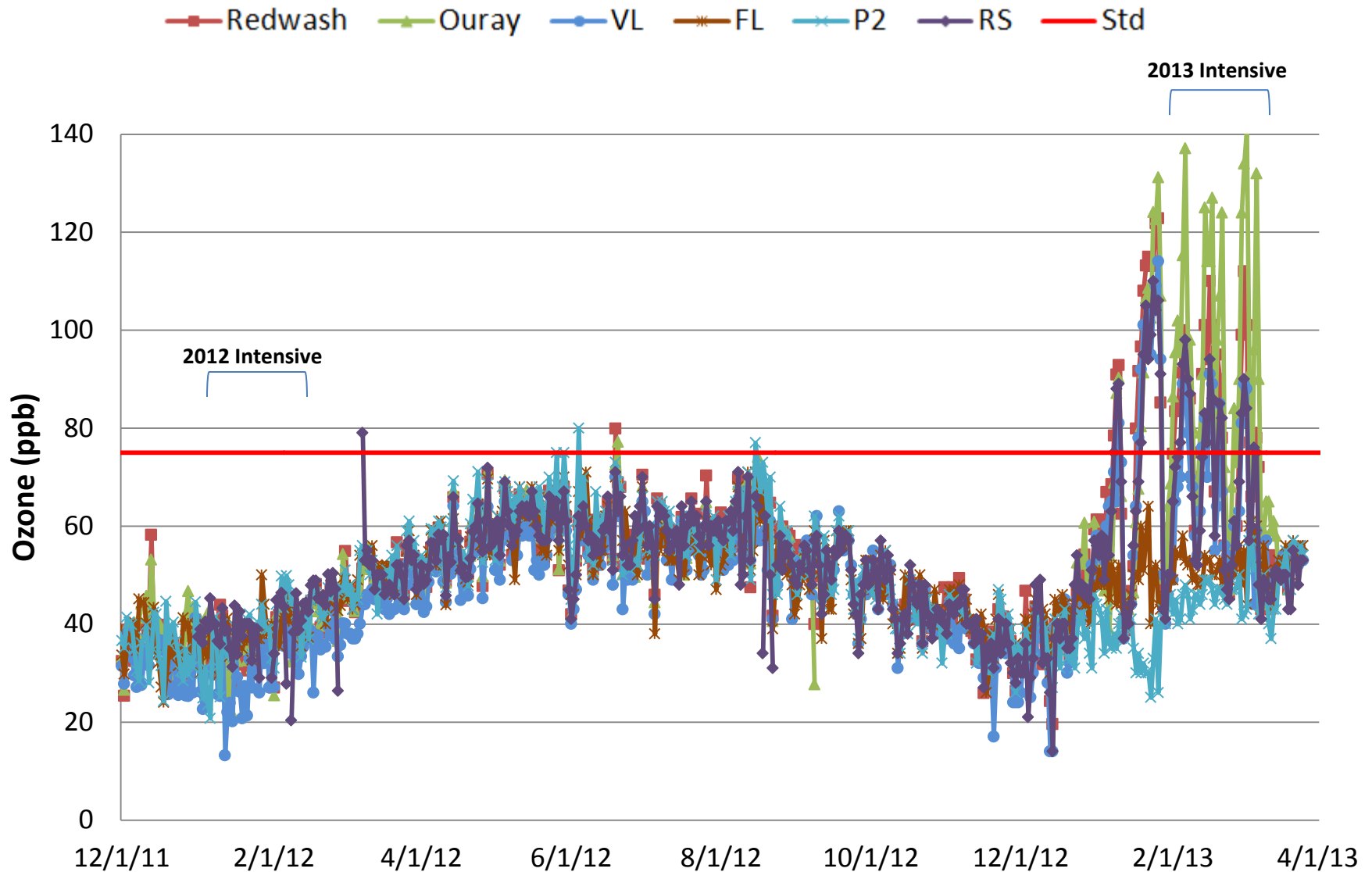


Source: Russ Schnell, Director, Observatory Operations, NOAA/CMDL

# Ozone, Temperature and Snow Depth 2011/2012

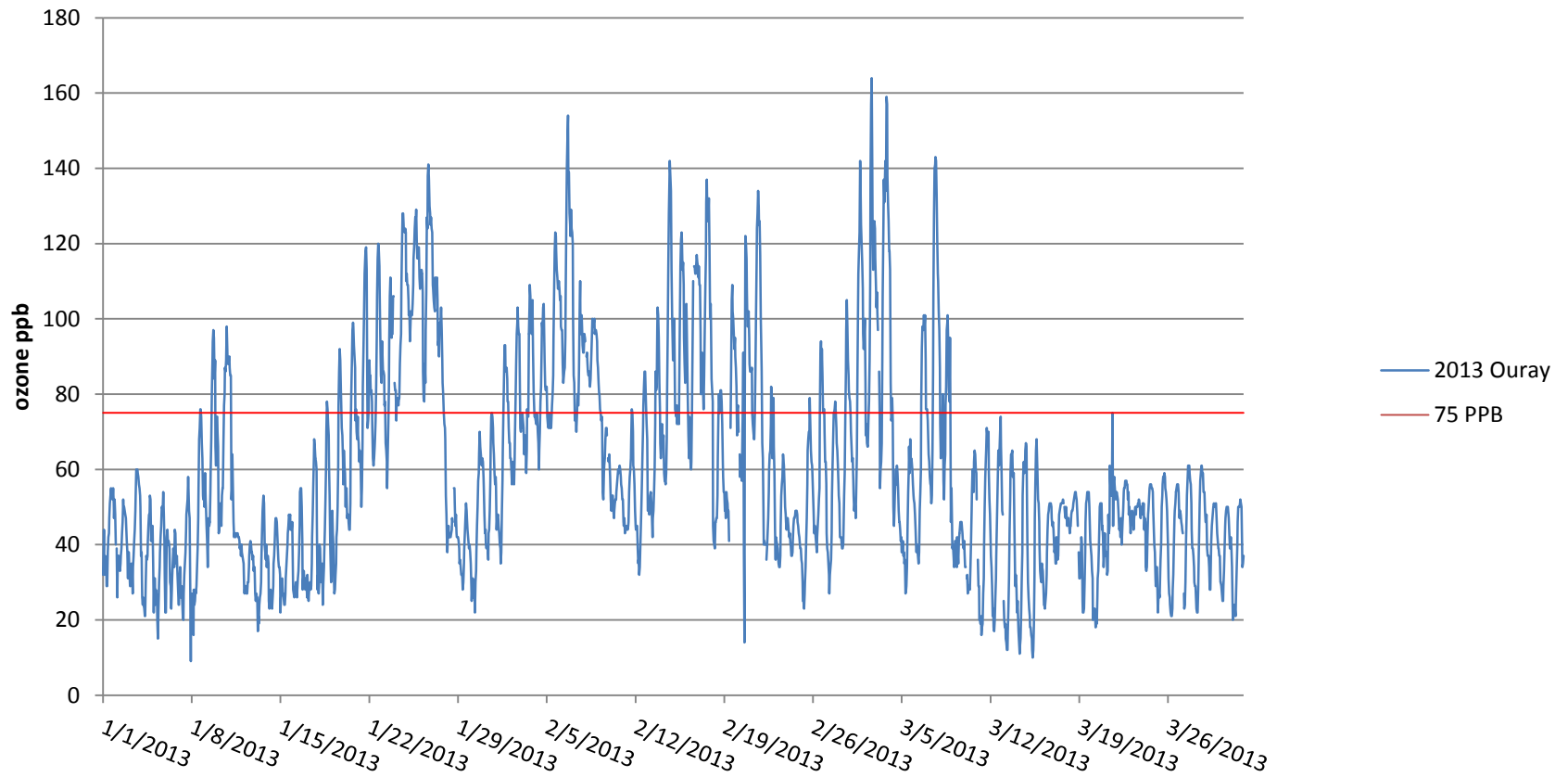


# Ozone Concentration, 8-hr



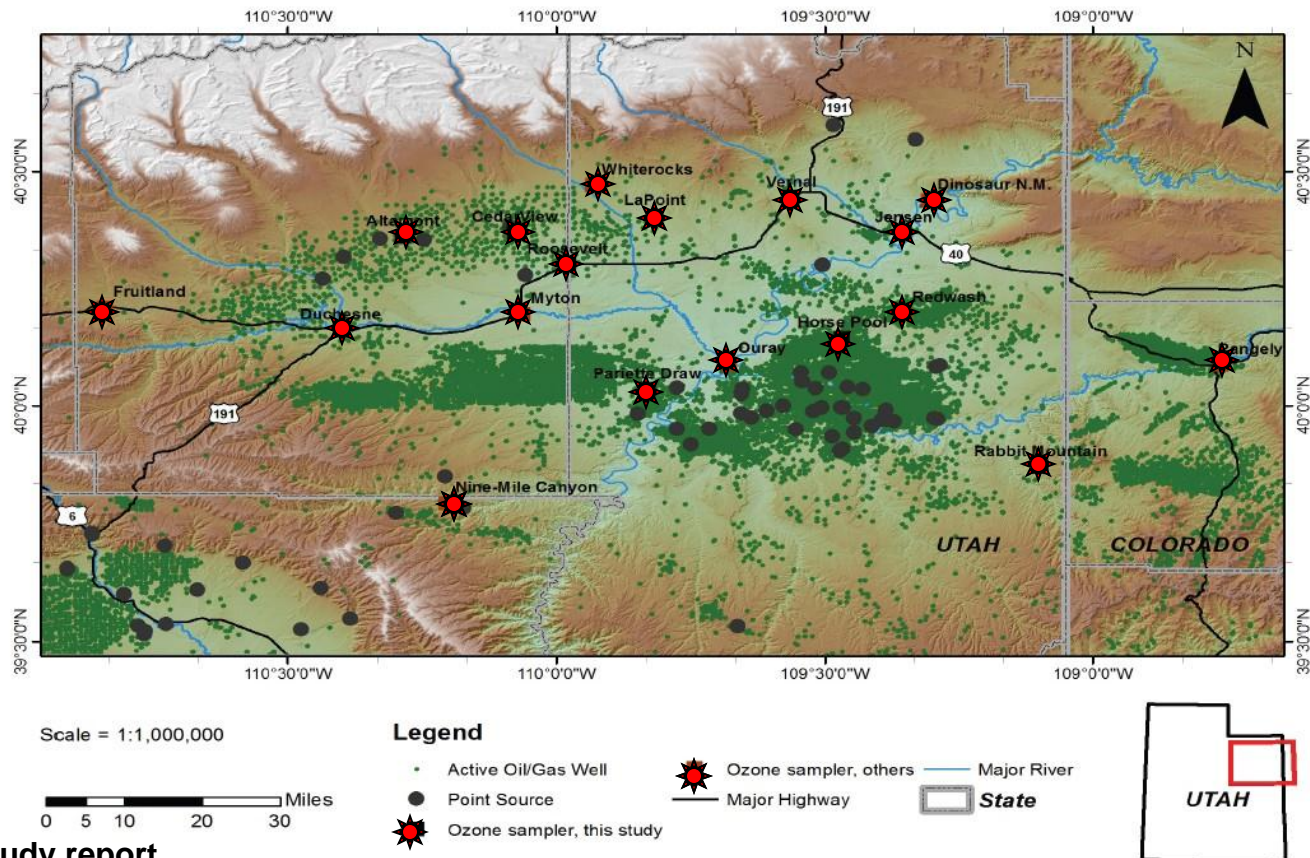
# Distinct Winter Events, Episodic

**Uintah Basin - 2013 Ouray Hourly** (\*not QA)



# Special Winter Ozone Monitoring Studies 10/11, 11/12, 12/13

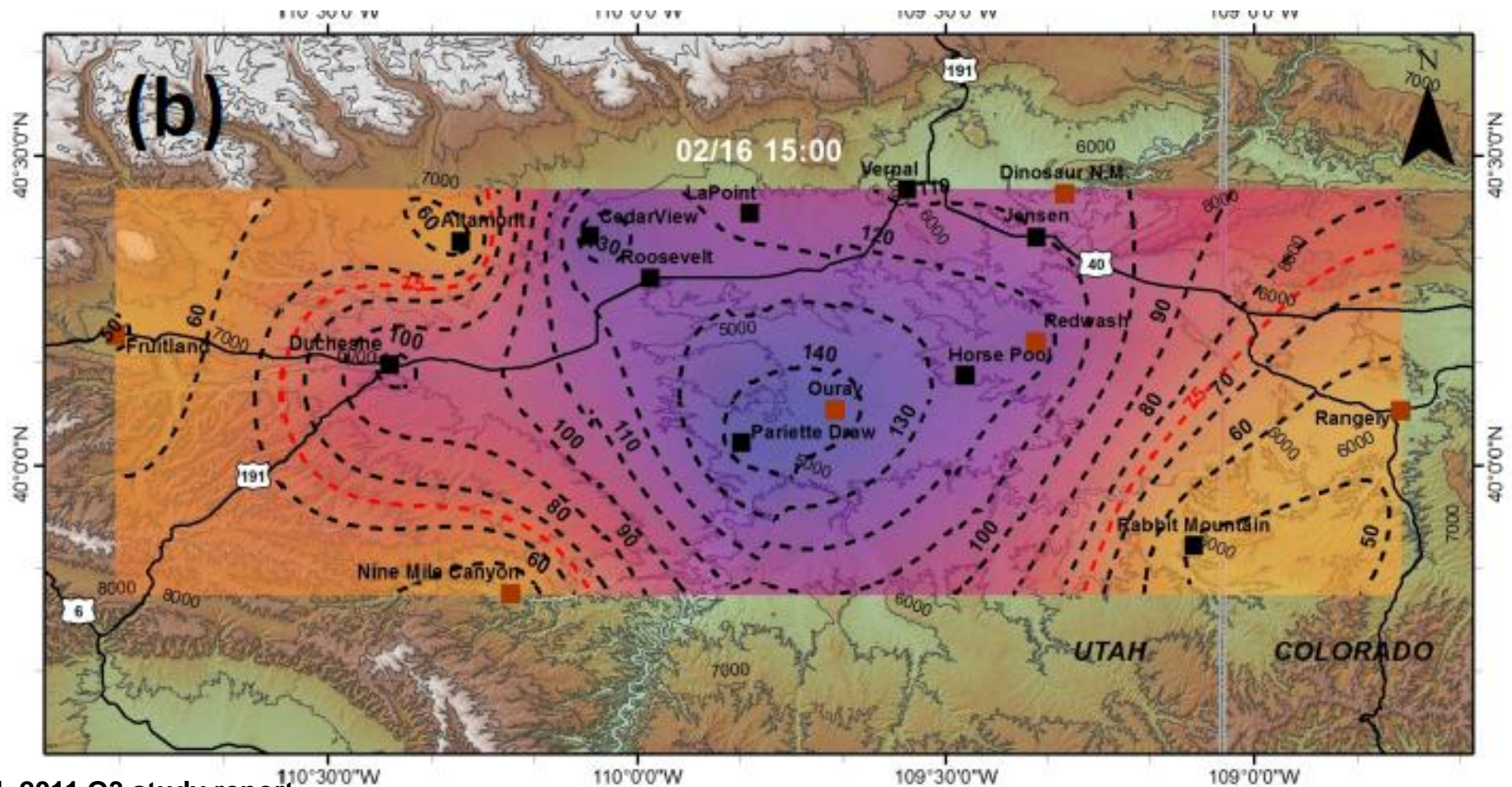
- 8 permanent and 10 portable sites
- O<sub>3</sub>, PM<sub>2.5</sub>, NO<sub>x</sub> and Met, VOC sampling





# USU/EDL Special Monitoring Study Winter 2010/2011

- Ozone 1-hour at 3 pm Feb 16, 2011
- Basin-wide O<sub>3</sub>



# Horse Pool Super Site

## *Installation of scaffold tower and monitoring pod*





# Horse Pool Super Site

## *Monitoring equipment in monitoring pod*

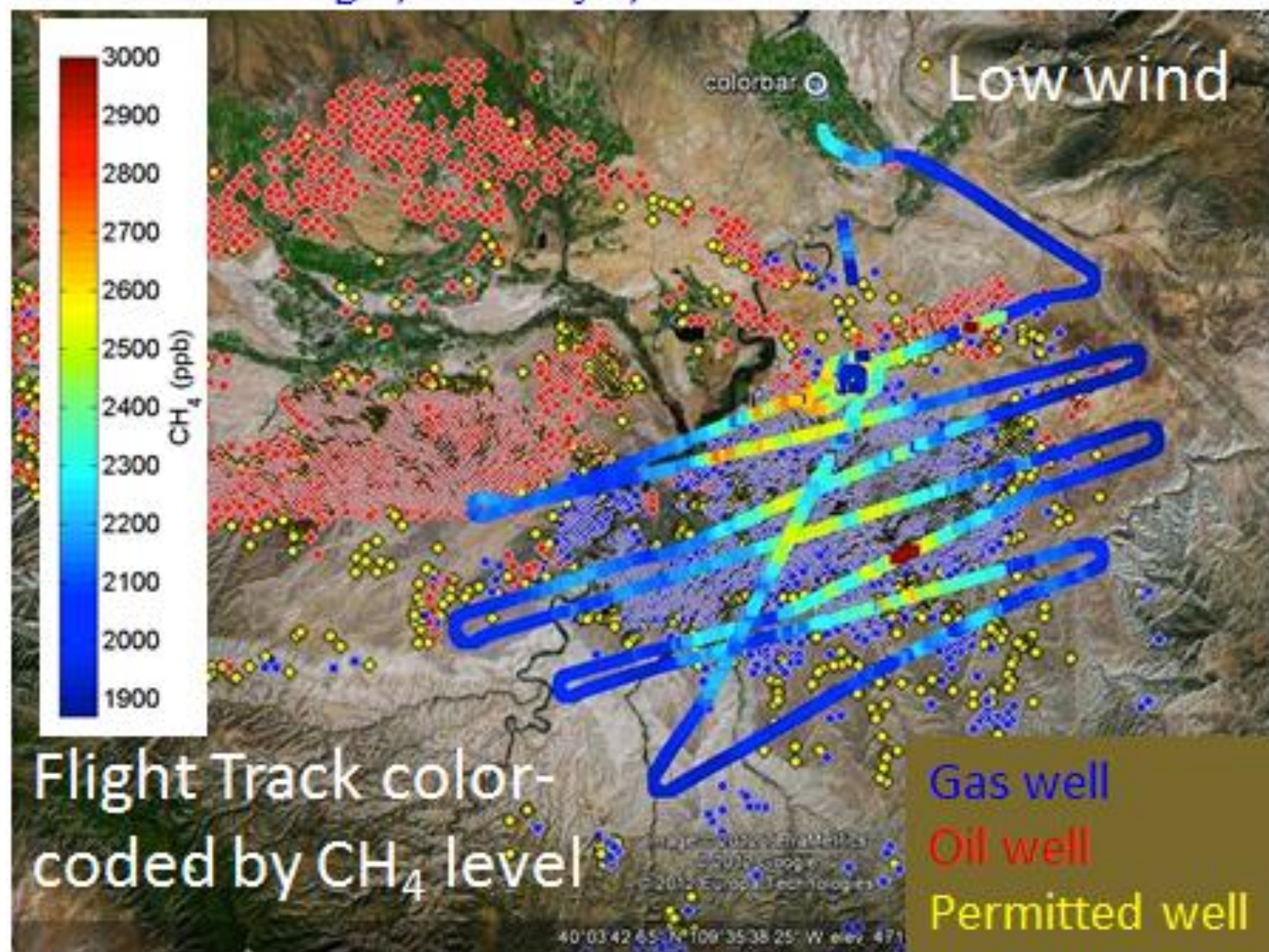


# Winter O<sub>3</sub> Intensive Study Components

- Aircraft Basin-wide Measurements: O<sub>3</sub>, NO<sub>x</sub> and Speciated VOC
- Vertical Profiling of Meteorological Parameters, O<sub>3</sub>, NO<sub>x</sub>, and Total Hydrocarbons using Tethered Balloon
- Wintertime Ozone Formation Chemistry at Horse Pool
- Atmospheric Boundary Layer and Recirculation Characterization Basin-wide
- Long-Term Trends Wintertime Monitoring for Ozone, and Key Precursor Species – Roosevelt and Horse Pool “Super Sites”
- Photochemical Modeling of the Basin’s Airshed



## Uintah Basin Flight, February 7, 2012



# Summary

- Issue with winter ozone in the Basin
- Only occurs under specific conditions
- Cooperative effort to understand formation
- Let science lead the strategies
- Proactive effort through Ozone Advance
- Avoid nonattainment / lower design value



# Early Reductions Will Benefit Uintah Basin

- Improve public health
- More time to solve the problem
- Reduce the design value for the SIP
  - The CAA requires areas to be designated based on the severity of the problem
  - Areas closer to the standard have fewer mandatory requirements, but must attain the standard more quickly
  - If an area does not attain the standard it is bumped up to the next higher classification level
- Potential Cost Savings for Companies
  - Make reductions over time rather than all at once
  - Ability to include future costs in long-term business plan
  - Greater ability to control emission reduction strategy
- Ability to use voluntary measures and strategies that are more difficult to quantify
- Episodic reductions could be effective

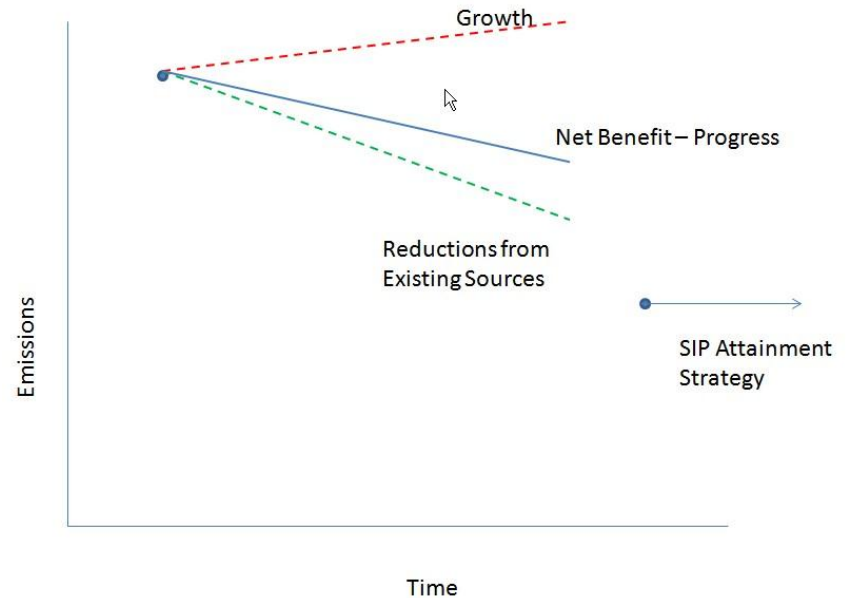
# Ozone Advance Program



- Ozone Advance is a voluntary EPA program to facilitate early reductions of ozone before an area is designated nonattainment
  - Flexible, not a burdensome process
  - Stakeholder involvement
  - Opportunity for voluntary or non-regulatory measures
  - Opportunity to quantify and recognize early reductions
  - EPA support for the process
  - Opportunity to affect the design value and progress under this program may be a factor in timing of redesignations under current standard
  - No guarantees or regulatory relief
- On May 21, 2012 Governor Herbert submitted an application to EPA to enroll Duchesne and Uintah Counties in the program
- On June 4, 2012 EPA accepted Utah into the Ozone Advance Program

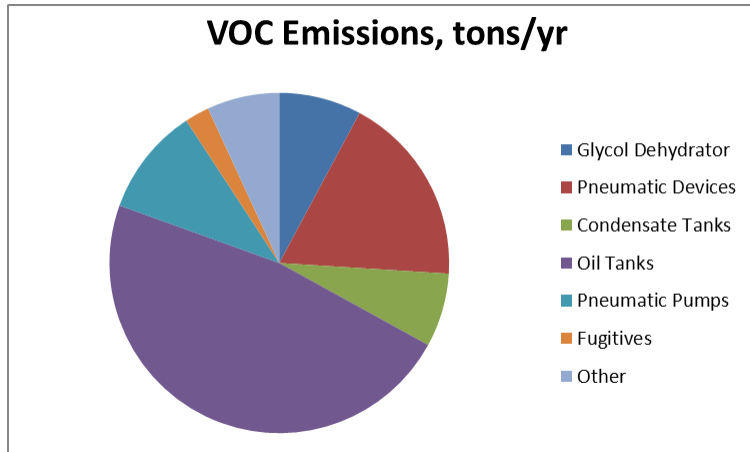
# Permitting

- Ensure that new sources are well controlled
  - BACT, NSPS, NESHAP
  - Avoid need for future retrofits
- New source growth must not cause or contribute to a violation of the NAAQS
  - Attainment areas rely upon modeling and monitoring data
  - This approach is more difficult in the Basin
    - High ozone values
    - Significant growth in production
  - Options available
    - Modeling
    - Offsets
    - Other justifiable approach
  - Working on a broader analysis to make this demonstration



# Initial Strategies

Oil and Gas Emissions,  
Duchesne and Uintah Counties



Source: WRAP Phase III Inventory, 2012 projections

- Pollution prevention
  - Pneumatic devices
  - Best management practices
- Ensure existing equipment is operating as intended
  - General provisions
  - Submerged filling
- Episodic control plans
- Retrofits of oil and condensate tanks



# General Approval Order

- Typical oil or gas wellhead site
  - Required emission control equipment and emission limits
  - Appropriate de minimus level
    - What makes sense for specific equipment
    - May result in recommended rule change
  - When is case-by-case review required?
  - Compatible with existing permitting system for Division of Oil Gas and Mining
- Consider strategies for retrofitting existing equipment

# Stakeholder Meetings

- July 30, 2013, DEQ Board Room, 3-5
  - Overview of ozone in the Basin
  - Strategies: pollution prevention, best management practices, general provisions, episodic controls
- August 12, DEQ Board Room, 3-5
  - General permit, de minimus levels, potential retrofits for well sites
- Early Fall (date TBD)
  - General permit, de minimus levels, potential retrofits for well sites
- Future public meetings will be scheduled focused on specific topics